

Round Lake Road Project Development and Environment (PD&E) Study



Air Quality Technical Memorandum

May 7, 2019



Table of Contents

1.0	Project Description:	1
2.0	Air Quality Analysis:	3
3.0	Greenhouse Gases:	5
4.0	Summary:	7

Figures

Figure 1: Location Map	2
Figure 2: Intersection Detail	6

Tables

Table 1: 2040 Build Results	4
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1.0 Project Description:

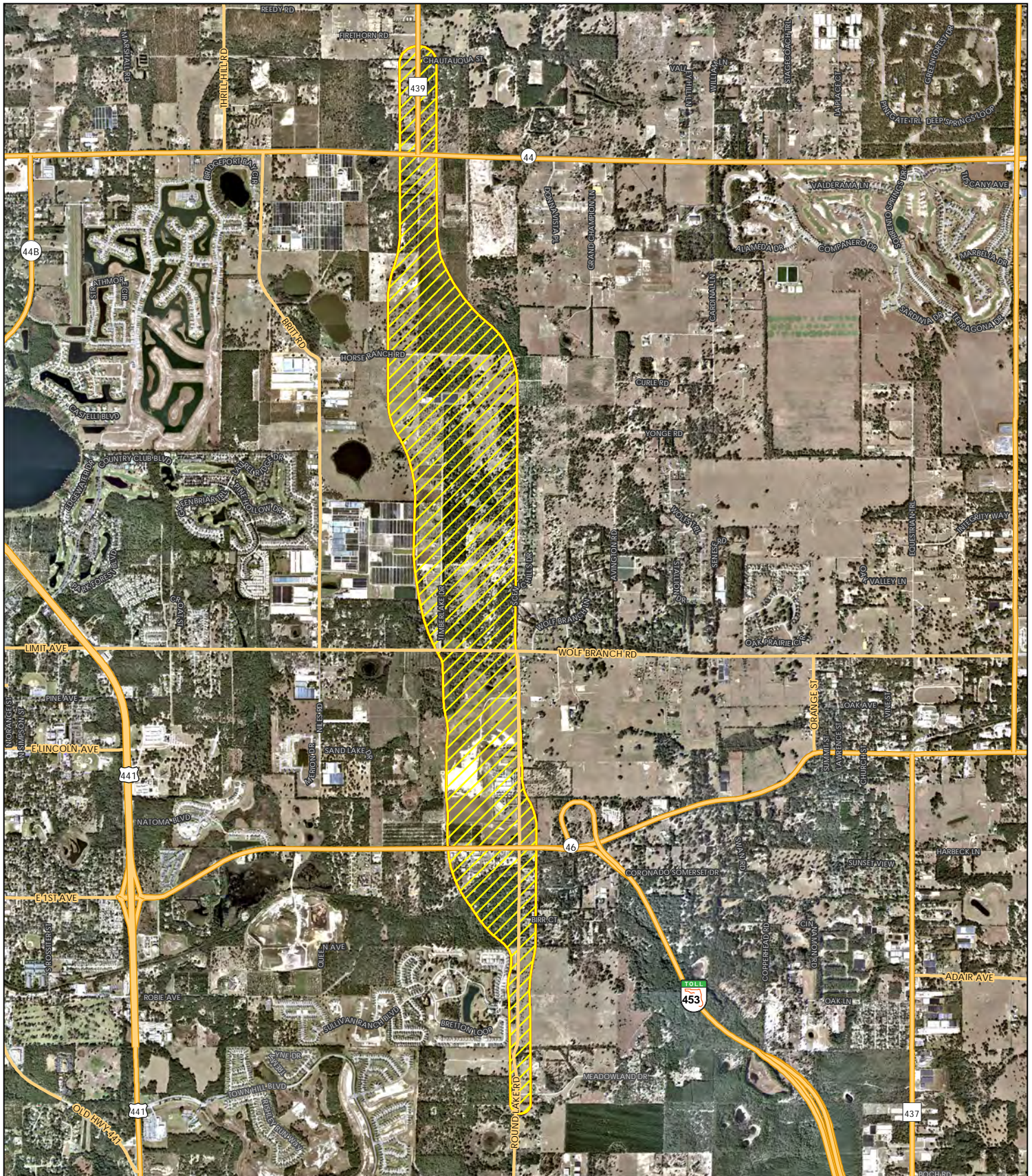
Lake County is conducting a Project Development and Environment (PD&E) study to evaluate the proposed widening of Round Lake Road from Meadowland Drive to Wolf Branch Road and continuing the proposed improvements on a new alignment north of Wolf Branch Road to north of State Road (SR) 44, a length of approximately five miles. The Round Lake Road PD&E study area is in the northeast portion of Lake County bound by the Lake/Orange County Line to the south, US 441 to the west, CR 44A to the north and CR 437 to the east. In the PD&E study area, Round Lake Road is a discontinuous north-south two-lane undivided rural collector roadway with portions of the roadway facility abutting the City of Mount Dora and unincorporated Lake County. (**Figure 1- Project Location**)

The PD&E study evaluates alternatives to develop a recommendation for a preferred alignment and improvements for Round Lake Road that include widening the existing segments and constructing new segments, resulting in a continuous four-lane divided urban section from Sullivan Ranch Boulevard to SR 44 and an improved two-lane urban section from the County line to Sullivan Ranch Boulevard, for a total length of approximately five miles. The proposed typical section consists of four through lanes separated by a grass median with bicycle lanes and a buffered sidewalk or multi-use trail on each side of the roadway. In addition, the study includes evaluation of short-term improvements to address traffic operations, multi-modal travel, and school access route needs in the study area. The project study area, as depicted in **Figure 1**, includes the following study intersections:

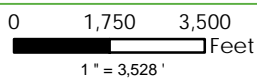
- Round Lake Road at Sullivan Ranch Boulevard
- Round Lake Road at SR 46
- Round Lake Road at Wolf Branch Road
- County Road (CR) 439/Riordan Road @ SR 44
- CR 439 at CR 44A

The intersection at Round Lake Road at Sullivan Ranch Boulevard will be designed as a roundabout to transition from 2 lanes to 4 lanes. The configuration of the other intersections will be evaluated and determined during project design with roundabouts being considered at additional areas.

The Round Lake Road PD&E study area is located in the northeastern portion of Lake County, with the Orange County line immediately to the south and the Seminole County line about 10 miles to the east. The study corridor is in an area of Lake County that is experiencing and is anticipated to continue experiencing substantial growth in the future. Economic, land development and transportation projects of significance in this region include the 1,300-acre Wolf Branch Innovation District with industrial, office, retail, residential and institutional land uses, the \$1.6 billion, 25-mile Wekiva Parkway (SR 429) construction project, the 15-mile regional multi-use Lake Wekiva Trail and the 2,112-acre Mt. Plymouth-Sorrento Community Redevelopment Area (CRA). With the anticipated completion of the Wekiva Parkway project by 2021, the enhanced infrastructure affords the opportunity to increase the economic vitality of this region.



Round Lake Round PD&E Study Area



PROJECT LOCATION MAP

FIGURE 2



2.0 Air Quality Analysis:

The proposed Project was reviewed for air quality impacts consistent with the guidance provided by the Federal Highway Administration (FHWA) Discussion Paper: Appropriate Level of Highway Air Quality Analysis for a CE, EA/FONSI, and EIS. Lake County is an area currently designated as *attainment*, meaning this area is considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act.

The Project was subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology, and traffic. The FDOT's screening model, CO Florida 2012 (released March 12, 2012) uses the EPA approved software (**Moves 2010a and CAL3QHC2**) to produce estimates of one-hour and eight-hour CO at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the one-hour and eight-hour **National Ambient Air Quality Standards (NAAQS)** for CO that are 35 parts per million (ppm) and 9 parts per million (ppm), respectively.

One intersection was included in the Project, Round Lake Road at SR 46. This intersection was chosen for evaluation for because the intersection is expected to receive the most additional traffic from the Build scenario. The traffic data input used in the evaluation is attached to this memorandum (**Figure 2: Intersection Detail Map**).

Estimates of CO were predicted for the default receptors which are located 10 feet to 150 feet from the edge of the roadway. Based on the results from the screening model, the highest Project-related CO one-hour and eight-hour levels are not predicted to meet or exceed the one-hour or eight-hour **NAAQS** for this pollutant with either the Build or No-Build scenarios. As such, the Project "passes" the screening model. The results of the screening model are attached as below.

CO Florida 2012 - Results
 Tuesday, March 05, 2019

Project Description

Project Title Round Lake Road PD&E Study
 Facility Name Lake County, FL
 User's Name JCM
 Run Name Run 1
 FDOT District 5
 Year 2040
 Intersection Type 6 X 4
 Speed Arterial 45 mph
 Approach Traffic Arterial 3298 vph

Environmental Data

Temperature 47.8 °F
 Reid Vapor Pressure 13.3 psi
 Land Use Suburban
 Stability Class D
 Surface Roughness 108 cm
 1 Hr. Background Concentration 3.3 ppm
 8 Hr. Background Concentration 2.0 ppm

Results

(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	6.4	3.8
2	6.7	4.0
3	6.9	4.1
4	6.1	3.7
5	5.6	3.4
6	6.2	3.7
7	6.4	3.8
8	6.8	4.1
9	6.2	3.7
10	5.6	3.4
11	6.4	3.8
12	6.7	4.0
13	6.9	4.1
14	6.1	3.7
15	5.6	3.4
16	6.2	3.7
17	6.4	3.8
18	6.8	4.1
19	6.2	3.7
20	5.6	3.4

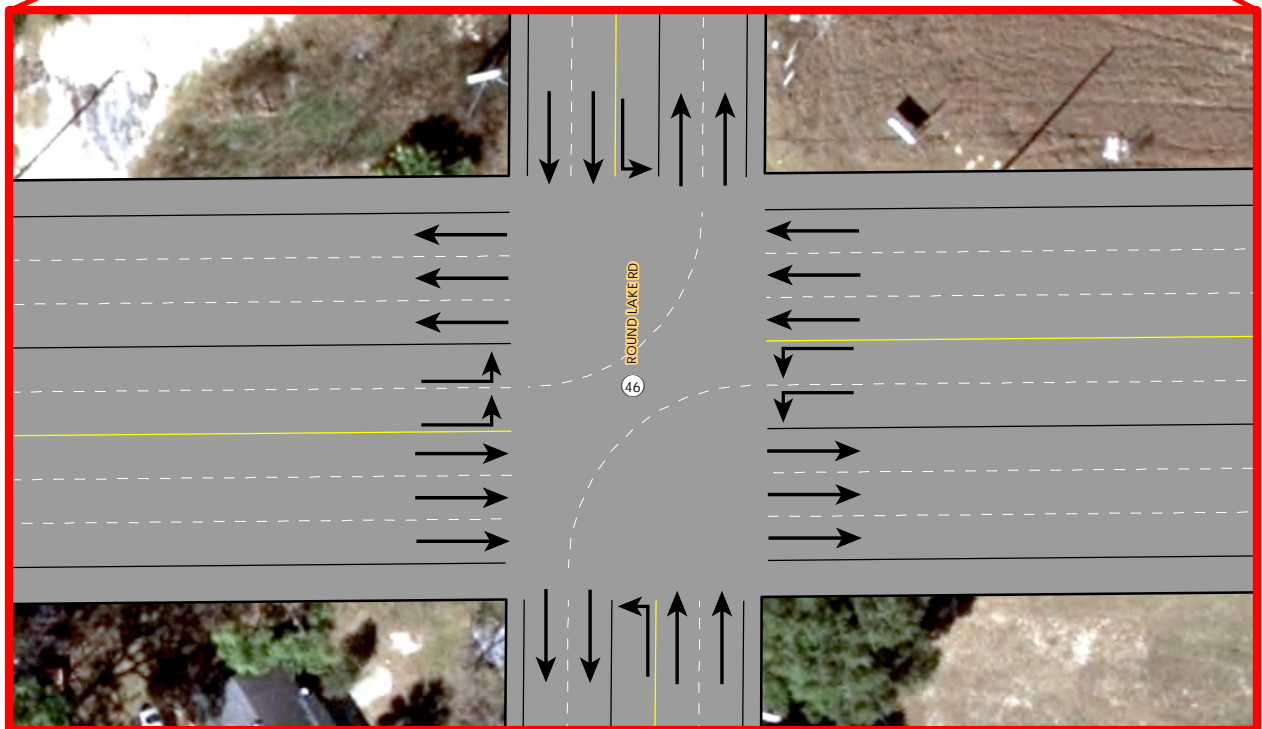
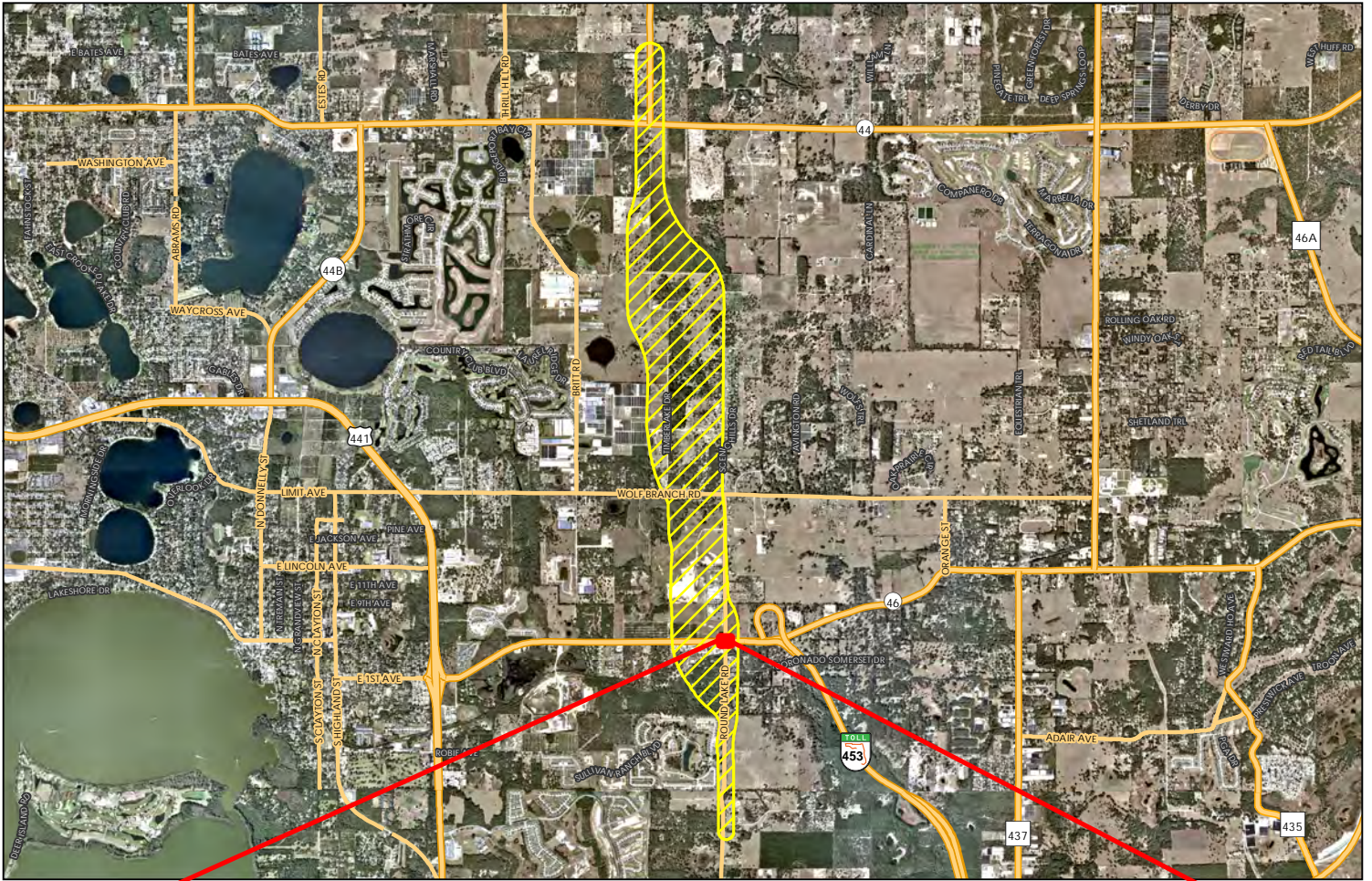
 *****PROJECT PASSES*****
 NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED

3.0 Greenhouse Gases:

Greenhouse gases (GHG) cause a global phenomenon in which heat is trapped in the earth's atmosphere. Because atmospheric concentration of GHGs continues to climb, our planet will continue to experience climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation and sea levels. The burning of fossil fuels and other human activities are adding to the concentration of GHGs in the atmosphere. Many GHGs remain in the atmosphere for time periods ranging from decades to centuries.

To date, no national standards have been established regarding GHGs, nor has United States Environmental Protection Agency (EPA) established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for CO₂ under the Clean Air Act. GHGs are different from other air pollutants evaluated in the federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases. The affected environment for CO₂ and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore, presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

Under NEPA, detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making (40 CFR 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7). FHWA has concluded, based on the nature of GHG emissions and the exceedingly small potential GHG impacts of the proposed action that the GHG emissions from the proposed action will not result in "reasonably foreseeable significant adverse impacts on the human environment" (40 CFR 1502.22(b)). The GHG emission from the Project build alternatives will be insignificant, and will not play a meaningful role in a determination of the environmentally preferable alternative or the selection of the preferred alternative. More detailed information on GHG emissions "is not essential to a reasoned choice among reasonable alternatives" (40 CFR 1502.22(a)) or to making a decision in the best overall public interest based on a balanced consideration of transportation, economic, social, and environmental needs and impacts (23 CFR 771.105(b)).



Round Lake Round PD&E Study Area

NOT TO SCALE

INTESECTION DETAIL

FIGURE 2



4.0 Summary:

The Project is located in an area which is designated as attainment for all of the **National Ambient Air Quality Standards** under the criteria provided in the **Clean Air Act**. Therefore, the **Clean Air Act** conformity requirements do not apply to the Project. This document does not incorporate an analysis of the GHG emissions or climate change effects of each of the alternatives because the potential change in GHG emissions is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those local impacts will not be meaningful to a decision on the environmentally preferable alternative or to a choice among alternatives. For these reasons, no alternatives-level GHG analysis has been performed for this Project.